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GENERAL MOTORS CORPORATION
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EXAMINER

WANG, BEN C

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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06/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/701,143

Applicant(s)

HOLLAND, STEVEN W.

Examiner

BEN C. WANG

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

1. Applicant's response dated February 18, 2009 responding to the Office action mailed November 18, 2008 provided in the rejection of claims 22-37.

Claims 22-37 remain pending in the application and which have been fully considered by the examiner.

Applicant's arguments with respect to claims currently amended have been fully considered but are not persuasive. Please see the section of "Response to Arguments" for details.

2. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Rejections – 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knight et al. (Pub. No. US 2003/0167345 A1) (hereinafter 'Knight-2' - art made of record) in view of Coburn, II et al., (Pat. No. US 6,892,216 B2) (hereinafter 'Coburn' - art previously applied)

4. **As to claim 22** (Previously Presented), Knight-2 discloses a software management system for use in a vehicle, comprising:

- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...); and
- a communications port of the vehicle (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);

- an interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...) connected to the communications port and the system bus, wherein the interface processor is adapted to, when the portable memory device (e.g., Fig. 1B, element 112 – USB Device) is connected to the communications port:
- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like); and
- an external processor having a communications port (e.g., Fig. 1B, element 110 – USB Host; [0149] - ... USB Host may be any computer having a USB host controller, such as a standard PC ...)
- to transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Fig. 1B, element 112 – USB Device)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host; 112 – USB Device), providing a resulting measured result to remote system by USB controller (e.g., P. 29, Left-Col., Lines 50-57) and USB adapter

capability for downloading the updated software (e.g., [0190]), but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Common Platform for Use in Automotive Services*, Coburn discloses a portable memory device adapted to store software files and diagnostic information (e.g., Col. 2, Lines 3-6 – A universal serial bus (USB) ... is used for the common platform to communicate with host computer and with the equipment sensors); adapted to receive the diagnostic information from the portable memory device (e.g., Col. 3, Lines 49-60 - ... an automotive diagnostic device ... through common platform, the information collected by equipment sensors is transmitted to host computer to be analyzed); each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor (e.g., Col. 6, Lines 1-29 - In response to a 'get_configuration_status' command ... to return information including the currently loaded application software that is stored in ... equipment sensors 130 ... the equipment sensor can send out identification code (to generate diagnostic information) to the common platform or to the host computer ... Host computer 110 uses this information to determine if all software and hardware components that relate to common platform 120 are up-to-date. In case the software is not up-to-date (indicating success of software installation), common platform executes the "download_application_code" routine to download the appropriate software from the host computer 110 to match the hardware ...; Col. 7, Lines 34-47 - ... If the application software is current and matches the equipment sensors (indicating success of software installation) ... if there are any problems with the application software, such as obsolete

or incorrect code or version ...); to analyze the diagnostic information to determine successful software installation on the vehicle (e.g., Col. 3, Lines 3-16 - ... The host computer also includes various software for facilitating the functions of equipment sensors ...)

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Coburn into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the Coburn's system which offers significant advantages that common platform provides a plug and play electronic hardware interface between host computer and equipment sensors and can be loaded with different software routines to control different equipment sensors as once suggested by Coburn (e.g., Col. 3, Lines 61 through Col. 4, Line 4)

5. **As to claim 23** (Previously Presented) (incorporating the rejection in claim 22), Knight-2 discloses the system wherein the communications ports of the vehicle and the external processor comprise open architecture communication ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0146] – Vehicle communications network is a collection of one or more computer networks that facilitate communications between network nodes ...)

6. **As to claim 24** (Previously Presented) (incorporating the rejection in claim 23), Knight-2 discloses the system wherein the communications ports of the vehicle and the

external processor comprise universal serial bus ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 - vehicle communications network; Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 - vehicle communications network; [0146] - Vehicle communications network is a collection of one or more computer networks that facilitate communications between network nodes ...), the portable memory device comprises a universal serial bus drive (e.g., Fig. 1B, element 112 - USE Device)

7. **As to claim 25** (Previously Presented) (incorporating the rejection in claim 22), Knight-2 discloses the system wherein the portable memory device stores software files for multiple vehicle types, and the interface processor identifies the software files based at least in part on vehicle type (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like)

8. **As to claim 26** (Previously Presented) (incorporating the rejection in claim 22), Coburn discloses the system wherein the multiple vehicle processors generate the diagnostic information by automatically performing self-tests on the installed software (e.g., Col. 7, Lines 34-47 - ... If the application software is current and matches the

equipment sensors ... if there are any problems with the application software, such as obsolete or incorrect code or version ...)

9. **As to claim 27** (Previously Presented), Knight-2 discloses a vehicle comprising:

- a communications port (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);
- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...); and
- an interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...) connected to the communications port and the system bus, wherein the interface processor is adapted to, when a portable memory device (e.g., Fig. 1B, element 112 – USB Device) is connected to the communications port:
- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a

vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);

- to transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Fig. 1B, element 112 – USB Device)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device), providing a resulting measured result to remote system by USB controller (e.g., P. 29, Left-Col., Lines 50-57) and USB adapter capability for downloading the updated software (e.g., [0190]), but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Common Platform for Use in Automotive Services*, Coburn discloses adapted to generate diagnostic information indicating success of software installation on the multiple vehicle processors (e.g., Col. 6, Lines 1-29 - In response to a 'get_configuration_status' command ... to return information including the currently loaded application software that is stored in ... equipment sensors 130 ... the equipment sensor can send out identification code (to generate diagnostic information) to the common platform or to the host computer ... Host computer 110 uses this information to determine if all software and hardware components that relate to common platform 120 are up-to-date. In case the software is not up-to-date (indicating success of software installation), common platform executes the "download_application_code" routine to download the appropriate software from the

host computer 110 to match the hardware ...; Col. 7, Lines 34-47 - ... If the application software is current and matches the equipment sensors (indicating success of software installation) ... if there are any problems with the application software, such as obsolete or incorrect code or version ...);

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Coburn into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the Coburn's system which offers significant advantages that common platform provides a plug and play electronic hardware interface between host computer and equipment sensors and can be loaded with different software routines to control different equipment sensors as once suggested by Coburn (e.g., Col. 3, Lines 61 through Col. 4, Line 4)

10. **As to claim 28** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **23** as set forth accordingly.

11. **As to claim 29** (Previously Presented) (incorporating the rejection in claim 28), Knight-2 discloses the vehicle wherein the communications port comprises a universal serial bus port (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 - vehicle communications network; [0008] - ... a Universal Serial Bus (USB) port)

12. **As to claim 30** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **25** as set forth accordingly.

13. **As to claim 31** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **26** as set forth accordingly.

14. **As to claim 32** (Previously Presented), Knight-2 discloses a vehicle software installation method for use in vehicle assembly, comprising:

- an interface processor of a vehicle via a communications port of the vehicle (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...), wherein the interface processor is connected to multiple vehicle processors of the vehicle via a system bus of the vehicle;
- employing the interface processor to identify, for each of the multiple vehicle processors (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...), software files on the portable memory device, and to load the software files received over the communications port onto the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration

software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);

- installing the software files on the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);
- transferring diagnostic information indicating success of software installation from the multiple vehicle processors to the portable memory device via the interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device), providing a resulting measured result to remote system by USB controller (e.g., P. 29, Left-Col., Lines 50-57) and USB adapter capability for downloading the updated software (e.g., [0190]), but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Common Platform for Use in Automotive Services*, Coburn discloses a portable memory device adapted to store software files and

diagnostic information (e.g., Col. 2, Lines 3-6 – A universal serial bus (USB) ... is used for the common platform to communicate with host computer and with the equipment sensors); establishing communication between the portable memory device and an external processor via a communications port of the external processor (e.g., Fig. 2, elements 140 – Host Interface; 110 – Host Computer); and analyzing the diagnostic information via the external processor (e.g., Col. 3, Lines 3-16 - ... The host computer also includes various software for facilitating the functions of equipment sensors ...) to determine success of software installation in the vehicle (e.g., Col. 6, Lines 1-29 - In response to a 'get_configuration_status' command ... to return information including the currently loaded application software that is stored in ... equipment sensors 130 ... the equipment sensor can send out identification code (to generate diagnostic information) to the common platform or to the host computer ... Host computer 110 uses this information to determine if all software and hardware components that relate to common platform 120 are up-to-date. In case the software is not up-to-date (indicating success of software installation), common platform executes the "download_application_code" routine to download the appropriate software from the host computer 110 to match the hardware ...; Col. 7, Lines 34-47 - ... If the application software is current and matches the equipment sensors (indicating success of software installation) ... if there are any problems with the application software, such as obsolete or incorrect code or version ...)

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Coburn into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the Coburn's system which offers significant advantages that common platform provides a plug and play electronic hardware interface between host computer and equipment sensors and can be loaded with different software routines to control different equipment sensors as once suggested by Coburn (e.g., Col. 3, Lines 61 through Col. 4, Line 4)

15. **As to claim 33** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **23** as set forth accordingly.

16. **As to claim 34** (Previously Presented) (incorporating the rejection in claim 33), please refer to claim **29** as set forth accordingly.

17. **As to claim 35** (Previously Presented) (incorporating the rejection in claim 32), Knight-2 discloses the method further comprising employing a universal serial bus drive as the portable memory device (e.g., Fig. 1B, element 112 – USB Device)

18. **As to claim 36** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **25** as set forth accordingly.

19. **As to claim 37** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **26** as set forth accordingly.

Response to Arguments

20. Applicant's arguments filed on February 18, 2009 have been fully considered but they are not persuasive.

In the remarks, Applicant argues that, for examples:

(A.1) Neither *Knight-2* nor *Coburn* teaches or suggests “multiple vehicle processor ... each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor,” as claim 22 recites; and other similar arguments (on page 2, third paragraph through whole page 3 - emphasis added)

Examiner's response:

(R.1) Firstly, both *Knight-2* and *Coburn* teach how to update/install software to their respective vehicle multiple-processor hardware platforms. For example, *Knight-2* teaches “... allows the software to be updated via one of the communications ports of adapter 200 ...” (e.g., Fig. 1B – elements 102 – Fuel System Control Computer; 104 – Transmission Control Computer; 200 – USB Adapter; and Fig. 2 (USB Adapter) – elements 204 – CPU; 222 – ROM (EEPROM); paragraph [0157]); “... for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ...” (e.g., paragraph [0190]); and, *Coburn* teaches “... Extension software also determines what version of application software is currently loaded ... the Extension software can identify the newest equipment sensors and download appropriate

application software to control operation of the equipment sensors 130" (e.g., Fig. 2, elements 110 – Host Computer; 190 – Control Interface; 130 – Equipment Sensors; Col. 5, Lines 28-37 - emphasis added)

Secondly, *Coburn* further teaches "In response to a 'get_configuration_status' command ... to return information including the currently loaded application software that is stored in ... equipment sensors 130 ... the equipment sensor can send out identification code (to generate diagnostic information) to the common platform or to the host computer ... Host computer 110 uses this information to determine if all software and hardware components that relate to common platform 120 are up-to-date. In case the software is not up-to-date (indicating success of software installation), common platform executes the "download_application_code" routine to download the appropriate software from the host computer 110 to match the hardware ..." (e.g., Col. 6, Lines 1-29 - emphasis added); and "... If the application software is current and matches the equipment sensors (indicating success of software installation) ... if there are any problems with the application software, such as obsolete or incorrect code or version ..." (e.g., Col. 7, Lines 34-47)

Therefore, *Coburn* meets the claim limitations of "multiple vehicle processor ... each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor," (emphasis added)

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ben C Wang/
Ben C. Wang
Examiner, Art Unit 2192

/Tuan Q. Dam/
Supervisory Patent Examiner, Art Unit 2192

